Claim Amendments (Listing)

1-10 (Cancelled)

11.   (Currently Amended) An apparatus for identifying a buried object using ground penetrating radar (GPR) containing at least one GPR sensor, comprising:

an image processor for building a data structure corresponding to an image of a subsurface region containing the buried object from data collected from the at least one GPR sensor;

a ~~data~~ feature processor for processing the data ~~collected from the at least one GPR sensor~~ structure to extract at least one identifiable feature of the buried object from the data; and

a ~~detector capable of~~ discriminator for identifying the buried object from the at least one identifiable feature.

12.   (Currently Amended) ~~The~~ An apparatus ~~of claim 11~~ for identifying a buried object using ground penetrating radar (GPR) in a system containing at least one GPR sensor, comprising:

a data processor for processing data collected from the at least one GPR sensor to extract at least one identifiable feature of the buried object from the data; and

a detector for identifying the buried object from the at least one identifiable feature, wherein the detector ~~further~~ comprises[[:]] a depth indicator for directing the detector to a specified depth range.

13.   (Currently Amended) ~~The~~ An apparatus ~~of claim 11~~ for identifying a buried object using ground penetrating radar (GPR) in a system containing at least one GPR sensor, comprising:

a data processor for processing data collected from the at least one GPR sensor to extract at least one identifiable feature of the buried object from the data; and

a detector for identifying the buried object from the at least one identifiable feature, wherein the detector ~~further~~ comprises[[:]] a refractive index indicator for directing the detector to an object within a specified refractive index range.

14-33 (Cancelled)

34.   (New) The apparatus of claim 11, further comprising a display for presenting a representation of the identified buried object.

35.   (New) The apparatus of claim 34, wherein the representation of the identified buried object presented by the display comprises a three-dimensional rendering of a surveyed site containing the buried object.

36.   (New) The apparatus of claim 34, wherein the representation of the identified buried object presented by the display comprises a sequence of two-dimensional images of a reconstruction of a surveyed site containing the buried object.

37.   (New) A subsurface object locating system, comprising:

at least one ground penetrating radar (GPR) sensor,

a data processor, responsive to signals from the at least one GPR sensor, for generating data signals representative of a subsurface region scanned via the at least one GPR sensor;

an image processor for building a three-dimensional data structure corresponding to an image of the subsurface region from data signals generated by the data processor;

a feature processor for processing the three-dimensional data structure to extract an identifiable feature of an object buried the subsurface region; and

a display for presenting a representation of the identified buried object, based on the extracted identifiable feature of the buried object.

38.   (New) The system of claim 37, wherein the representation of the identified buried object presented by the display comprises a three-dimensional rendering of a surveyed site containing the buried object.

39.   (New) The system of claim 37, wherein the representation of the identified buried object presented by the display comprises a sequence of two-dimensional images of a reconstruction of a surveyed site containing the buried object.

40.   (New) A program product comprising instructions embodied in a computer readable medium, wherein the instructions are for causing one or more programmable computers to perform steps, comprising:

processing signals from at least one GPR sensor to generate data signals representative of a subsurface region scanned by the at least one GPR sensor;

building a three-dimensional data structure corresponding to an image of the subsurface region from the data signals representative of the subsurface region;

processing the three-dimensional data structure to extract an identifiable feature of an object buried in the scanned subsurface region; and

generating a three-dimensional representation of the buried object in the scanned subsurface region for display to a user, based on the extracted identifiable feature of the buried object.